

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

1. (Currently amended) A method of discharging ~~a liquid droplet~~ liquid droplets of a liquid material, comprising:

providing a liquid discharging apparatus comprising

a metering tube having ~~a discharge port communicating to outside~~ a columnar internal space formed substantially the same diameter, [[and]]

a plunger whose tip face closely contacts an inner wall surface of the metering tube,

a storage container filled with the liquid material,

a flow passage communicating the metering tube with the storage container,

a liquid material supplying valve on the flow passage,

a discharge valve disposed at a nozzle side distal end of the metering tube, and

a nozzle in communication with the discharge valve;

supplying the metering tube with the liquid material by moving the plunger rearward to a first position while the liquid material supplying valves is in the open position and the discharge valves is in the closed position;

moving the plunger forward from a first position and stopping the plunger at a second position ~~the plunger over a plurality of times during a forward movement process of the plunger~~

while the liquid material supplying valve is in the closed position and the discharge valves is in the open position, thereby discharging a first droplet from the nozzle; and

moving the plunger forward from the second position and stopping the plunger at a third position while the liquid material supplying valve is in the closed position and the discharge valves is in the open position, thereby discharging a second droplet from the discharge port,
~~controlling moving~~

wherein speed of the plunger from a start of a deceleration to a stop of the plunger is controlled during [[in]] the steps of moving forward and stopping the plunger such that a discharge quantity of the liquid droplet discharged from the discharge port becomes constant at every discharge, the first droplet and the second droplet are of the same quantity,

wherein the liquid material supplied in the metering tube in a single supplying step is discharged from the discharge port ~~[[over]]~~ in a plurality of times ~~during the forward movement process of steps of moving the plunger forward.~~

2. (Previously presented) A method of discharging a liquid droplet of claim 1, wherein the plunger having an air bubble removing mechanism.

3. (Previously presented) A method of discharging a liquid droplet, wherein the liquid droplet discharged by the method of the claim 1 or 2 is applied onto a work.

4. (Cancelled)

5. (Currently amended) An apparatus for discharging a liquid material, comprising:

a metering tube having ~~a discharge port communicating to outside~~ a columnar internal space formed substantially the same diameter;

a plunger whose tip face closely contacts an inner wall surface of the metering tube;

[[and]]

a storage container filled with the liquid material;

a flow passage communicating the metering tube with the storage container;

a liquid material supplying valve on the flow passage;

a discharge valve disposed at a nozzle side distal end of the metering tube; and

a nozzle in communication with the in communication with discharge valve; and

a controller controlling a rearward movement process of the plunger to a first position while the liquid material supplying valve is in the open position and the discharge valve is in the closed position, and a forward movement process of the plunger from a first position to a second position to discharge a first droplet, and from the second position to a third position to discharge a second droplet, while the liquid material supplying valve is in the closed position and the discharge valves is in the open position, thereby discharging the liquid material supplied in the metering tube in a single supplying step is discharged from the discharge port over nozzle in a plurality of times during the forward movement process of steps of moving the plunger forward,

wherein the controller controls a moving speed of the plunger from a start of a deceleration to a stop of the plunger in the steps of moving forward and stopping the plunger

~~such that a discharge quantity of the liquid droplet discharged from the discharge port becomes constant at every discharge~~ the first droplet and the second droplet are of the same quantity.

6. (Previously presented) An apparatus for discharging a liquid material of claim 5, comprising an input device indicating the moving speed of the plunger moving forward from start of deceleration to stop to the controller.

7. (Previously presented) An apparatus for discharging a liquid material of claim 6, wherein the controller controls the operation of the plunger on the basis of data concerning the moving speed of the plunger moving forward from start of deceleration to stop, which has been inputted by the input device.

8. (Previously presented) A method of discharging a liquid droplet of claim 1 or 2, wherein the plunger is moved by a motor and controlling moving speed of the plunger by controlling a rotation rotation of operation of the motor.

9. (Previously presented) An apparatus for discharging a liquid material of claim 5, 6, or 7, wherein the plunger having an air bubble removing mechanism.

10. (Previously presented) A apparatus of discharging a liquid material of claim 5, 6, or 7, wherein the plunger is moved by a motor and the controller controls moving speed of the plunger by controlling a rotation of operation of the motor.

11. (Previously presented) A method of discharging a liquid droplet of claim 1 or 2, wherein the step of controlling moving speed of the plunger comprises the steps of:

- a) starting and accelerating forward movement of the plunger;
- b) keeping the forward movement of the plunger at a constant speed;
- c) decelerating and stopping the plunger,

wherein the plunger is moved by a regulated amount.

12. (Previously presented) A method of discharging a liquid droplet of claim 1 or 2, wherein the step of controlling moving speed of the plunger comprises the steps of:

- a) starting and accelerating forward movement of the plunger;
- b) decelerating and stopping the plunger without keeping the forward movement at a constant speed,

wherein the plunger is moved by a regulated amount.